well-presented and exciting look at current understanding of the relationships of the various monocot groups based on a combined analysis of DNA sequence data from three genes. The consensus tree presented shows Acoraceae as the sister group to the rest of the monocots, followed by Alismatales (including Araceae and Tofieldiaceae) as the next diverging order, followed by Pandanales, Dioscoreales, Liliales, and finally Asparagales-commelinoids. Such an understanding of monocot relationships would only have been dreamed about several decades ago. Another particularly interesting paper was "Phylogenetic studies of Asparagales based on four plastid DNA regions" (by M.F. Fay et al.). In this case, a combined analysis of four plastid DNA regions was used to examine relationships among members of the Asparagales. This paper likewise is well-presented, has a visually easily understandable tree, and provides a fascinating look at this large and important order. While many of the most important insights have been published previously, this is none-the-less an important updating of the molecular systematics of the order. Understanding that the Amaryllidaceae, Asparagaceae, Iridaceae, and Orchidaceae (for example) all belong in the same order would have been unthinkable just a generation ago. Here we see a detailed presentation and explanation of their relationships. While some of the details may change as further molecular work is done, studies such as these are important steps towards an ever more sophisticated understanding of monocot phylogeny. Valuable contributions from the other sections including titles such as "Stem vasculature in climbing monocotyledons: A comparative approach," "Mating strategies in monocotyledons," "Ins and outs of orchid phylogeny," or "Fire response and conservation biology of Western Australian species of Restionaceae" could be reviewed here in detail. However, suffice it to say that overall this is a volume of diverse and exceptionally high quality papers.

If anything negative can be said, it would be that as expected from a proceedings volume, and from the size of the monocots (ca. 25% of the world's flowering plant species), the papers do not provide even coverage of all monocots groups. By necessity, it reflects the participants' interests and expertise, and many groups have not been included (in particular, the grasses have been excluded but are covered in a well done companion volume). However, there is quite broad coverage, ranging from such well known groups as Asparagales, Dioscoreales, Liliales, Orchidaceae, Commelinaceae, and Cyperaceae, to lesser known but none-the-less interesting groups such as the Restionaceae.

In summary, this is a valuable addition to our knowledge of monocot biology, and provides an excellent overview of the current state of understanding. It will undoubtedly be one of the most useful and broadly cited references on monocot systematics and evolution for many years to come. Further, the papers presented here are an exciting and accurate reflection of the diverse and dynamic nature of systematics and evolution at the beginning of the 21st century.—*George M. Diggs, Jr., Dept. of Biology, Austin College, Sherman, TX 75090, and Botanical Research Institute of Texas, Fort Worth, TX 76102, U.S.A. gdiggs@austinc.edu.*

ADA GRAHAM and FRANK GRAHAM, JR. 1995. **Kate Furbish and the Flora of Maine.** (ISBN 0-88448-175-1, hbk, ISBN 0-88448-176-X, pbk). Tilbury House Publishers, 132 Water Street, Gardiner, MA 04345, U.S.A. (Orders: 800-582-1899). $55.00 (hbk), $30.00 (pbk). 162 pp, 43 full color illustrations, 100 b/w illustrations, 6 b/w photographs, and a b/w map of Maine, 8" × 10".

This is the story of a spirit driven with a fire to collect and paint the unique and diverse flora that was Maine. In a lifetime spanning nearly a century (1834-1931) Catherine (Kate) Furbish would 'paint' a reputation as field botanist and botanical illustrator by creating more than 1,300 botanical watercolors and sketches. Self-taught in both fields of art and science, Kate had a no-nonsense approach to

her painting. She was a serious naturalist with a botanist's eye. "*I do not claim Artistic merit, but merely a truthful representation of what I saw in the plants, free from all decorative effects.*"

Born the only girl amongst five brothers, she held a strong reserve inherited from her father. Her work is not fussed over or decorative, but true botanical illustrations and yet the artistry does come through. Her illustration of Bloodroot, *Sanguinaria canadensis*, created between 1870-1880 when she was at her most productive, is masterful in both composition and form. At 36 years old, unmarried and still living with her parents, she was a woman of post Civil War Victorian conventionality holding within an unrelenting personal quest; a body of scientific and artistic work that was about to spring forth like no other period of her life. Photographs taken of her at the time show a clear, direct gaze revealing a curious nature not unlike earlier pioneer botanists.

Kate was not daunted by arduous 'solo' field exploration and sometimes hazardous conditions. One of these expeditions in 1880 would lead her to discover the Furbish's Lousewort, *Pedicularis furbishiae*, a wild snapdragon found nowhere in the world except along a 130-mile stretch of the Saint John River in Northern Maine. Its discovery has helped her name endure. She was also not deterred by gender prejudices and lack of proper academic degree. In a letter to a colleague she expresses her frustration with another botanist: "*I think he is one of those men, who if I was young and the bloom was on the peach, would feel more interested in helping me. I tried to show my appreciation by sending him my best work [a painting of trilliums] but I'm not going to wail over it all. For my part I help everyone whom I can and put my self out to do it too.*"

She was admired and respected by noted botanists of the day including her one time prodigy, Merritt Lyndon Fernald who was to become a noted field botanist and systematist at the Harvard Herbarium and editor of the New England Botanical Club's journal *Rhodora*. In his *Second Edition of the Portland Catalogue for Maine Plants* he speaks of the variety of *Aster cordifolius* that she had discovered in Aroostook County. "*Dedicated to Maine's distinguished artist-botanist, the "posy-lady" of the Madawaska Acadians, who through her undaunted pluck and faithful brush, has done more than any other to make known the wonderful flora of the "Garden of Maine.*"

It was not until the 19th century that botanical interest began to shift to the Northeastern United States and Asa Gray was one of the driving forces. He helped foster the popular interest in identification and collection of wild plants. Thus, Kate's favorite and often referenced books were Asa Gray's *How Plants Grow and Manual of the Botany of the Northern United States.* Unlike the rule of thumb that in biology diversity of species diminished from the equator toward the poles, Maine held many varied flora just waiting to be discovered by adventurous botanists like Kate. Maine was also varied in habitats: offshore islands and coastlines ranging from beaches to salt marshes to rocky headlands, sandy plains, dense forests, river valleys, mountaintops, thousands of lakes and ponds, old fields, and cold sphagnum bogs. Maine also lay in a transition zone. A portion of its flora is made up of Southern plants in their northern most limits, and Northern Canadian plants in their southern most limits. Maine was ripe for exploration!

At 49 years old, in the span of one decade Kate collected more than 1000 species of plants and of these illustrated 850. (In 1983 the complete checklist of vascular plants in Maine totals 2,137 known species.) "*It has been accomplished by means of hard work and persistent effort, and without regard to fatigue,*" wrote Furbish. "*I have wandered alone for the most part, on the highways and in the hedges, on foot, in hay ricks, in country mailstages (often with a revolver on the seat), in improvised rafts, (equipped with hammer, saw, nails, knife, rubber-boots, vasculum, etc.), in rowboats, on logs, crawling on hands and knees on the surface of bogs, and backing out, when I dare not walk, in order to procure a coveted treasure. Called 'crazy,' a 'fool'...this is the way my work has been done, the Flowers being my only society and the Manuals, the only literature for months together. Happy, happy hours!*"

I like the way the authors have moved Kate's 'time-line' of paintings along with the 'time-line' of the botanical history of Maine. In regards to the design and layout of the book, the illustrations are

interspersed throughout the text in a very pertinent and pleasing manner. It is evident that much thought has been given to the layout and design of this fine biography.—*Linny Heagy, Linny/Designer, Illustrator, Arlington, TX, U.S.A., a0005835@airmail.net.*

DANIEL W. GADE. 1999. **Nature and Culture in the Andes.** (ISBN 0-299-16124-2, pbk.). University of Wisconsin Press, 2537 Daniels St., Madison, WI, 53718, U.S.A. $18.95, 298 pp, 46 figures, 6" × 9".

The thrust of this volume is what the author refers to as the *nature/culture gestalt*. And throughout this work he proves that this is more than just an attempt at neologism; it is, in fact, a reality of the Andean region. The nature/culture gestalt is "a mutually interactive skein of human and nonhuman components, rather than opposing polarities or separate entities": Pg. 5. The Western penchant of categorization tends to separate these two seemingly unrelated phenomena, whereby the interrelatedness is lost and questions are only partially answered. Cultural geographer and professor emeritus at the University of Vermont, Daniel W. Gade delivers a groundbreaking volume for the annals of Andean history, ecology, and ethnobiology. *Nature and Culture in the Andes* is a book with a holistic vision that attempts to broaden the perspective achieved solely by objective scientific methods of inquiry.

The ten chapters include an introduction and conclusion laced with a self-reflexive commentary on the author's observations of Andean culture throughout his years of fieldwork. The main chapters themselves are free of the author's self-reflexive voice, but are framed within the concepts that are a result of his own self-reflection. In the introductory chapter, references are made to everyone from Goethe to Nietzsche and the author provides an autobiographical discussion that frames his insights and perspectives on the geographically and culturally diverse region of Andean South America. The second chapter, "Andean Definitions and the Meaning of *lo Andino*," covers the various meanings behind the term *the Andes*, geographically and culturally, and seeks to revise these definitions with his own. As the author states, "Over the past 400 years the definition of *the Andes* has shifted twice; from a nonregion to a region, and from a physical entity to a cultural area": Pg. 41.

The third chapter, "Deforestation and Reforestation of the Central Andean Highlands," is a chapter that stands out for several reasons. The common perspective of the Andes is one of a vast treeless region. Contrary to popular belief, the treeless Andes are actually a result of the economic demand for wood and subsequent deforestation. The author also discusses the role of anthropogenic fire and its role in environmental management. Fire was also used along the Pacific Northwest regions of North America (Boyd 1999); however, European colonists there frowned on its use, and the result being what many today perceive as the forest primeval, when in actuality the current tree population is relatively new. In the Andes, the author shows that fire management was *encouraged* by European settlers, the result being the treeless Andes as we know it. Various species of *Eucalyptus* were introduced to the region and replaced to some extent the species lost. The author goes on to offer 42 plant species, primarily at the genus level, that once covered the Andean highlands of Bolivia, Ecuador, and Peru. Tree removal was also a result of opening up more land for agriculture. As a result of population pressure, more and more trees were removed and this eventually led to environmental deterioration. However, without more land settled life would be limited in most regions.

The fourth chapter, "Malaria and Settlement Retrogression in Mizque, Bolivia," discusses the disease ecology of malaria in various elevations in the Andes and the pathogens introduced by European settlement. The author's case study provides a context for discussion whereby one of the largest and most virulent malaria histories in the region of western South America is brought to light through migration, population density, and racial/ethnic change. Chapter five, "The Andes as a Dairyless